

IN THE SPECIFICATION

Please amend the specification as follows, wherein changes in a paragraph are shown by strikethrough or double brackets for deleted matter and underlining for added matter.

Page 7, please delete the first full paragraph, beginning with “Devices and systems having...” and ending with “are disclosed herein,” and replace with the following paragraph:

-- Devices and systems having back-side-of-die, through-wafer guided-wave optical clock distribution systems (networks) which include an optical layer (core or cladding) with at least one vertical-to-horizontal input diffraction grating, at least one horizontal-to-horizontal diffraction grating, and at least one horizontal-to-vertical output diffraction grating along the path of optical power propagation on the back-side of the die, are described herein. Clock distribution in the optical layer[[,]] is accomplished through uniform, unfocused distribution of the clock signal. In addition, methods of making these devices and systems[[,]] and methods of using these devices and systems are disclosed herein.--

Page 13, please delete the second paragraph, beginning with “The first cladding layer 130...” and ending with “or other crystalline materials,” and replace with the following paragraph:

--The first cladding layer 130 and second cladding layer 160 can include materials that have a lower index of refraction than the core layer 135. The first cladding layer 130 and second cladding layer 160 can include, but [[is]] are not limited to, organic and inorganic materials. Such materials include, but are not limited to, silicon dioxide, silicon nitride, polyarylenes, ether, parylenes, polynorbornenes, polyimides, epoxies, or other polymer materials or porous low-k dielectric materials, or semiconductor or other crystalline materials.--

Page 20, please delete the second full paragraph, beginning with “The back-side-of-die, ...” and ending on page 21 with “circuit device 215, for example,” and replace with the following paragraph:

--The back-side-of-die, through-wafer guided-wave optical clock distribution system 200 includes, but is not limited to, front-side layers 210 and back-side layers 220. The front-side layers 210 include, but are not limited to, a device substrate 270, a packaging layer 280, a printed wiring board substrate 287, an optical via 285, and device circuitry 290. The back-side layers 220 include, but are not limited to, a first cladding layer 230, a core layer 235, a horizontal reflection absorption layer 250, a second cladding layer 260, and a vertical reflection absorption layer 265. The core layer 235 includes, but is not limited to, a vertical-to-horizontal input diffraction grating[[s]] 240, a horizontal-to-horizontal diffraction grating[[s]] 245, and a horizontal-to-vertical output diffraction grating[[s]] (not shown). More particularly, the primary structure 225 includes, but is not limited to, the optical via 285, the device circuitry 290, the device substrate 270, and the back-side layers 220. Specifically, the package layer 280, the optical via 285, the device circuitry 290, and the device substrate 270 could be included in an integrated circuit device 215, for example.--

Page 22, please delete the third full paragraph, beginning with “The back-side-of-die...” and ending on page 23 with “circuit device 315, for example,” and replace with the following paragraph:

--The back-side-of-die, through-wafer guided-wave optical clock distribution system 300 includes front-side layers 310 and back-side layers 320. The front-side layers 310 include, but

are not limited to, a device substrate 370, a packaging layer 380, a printed wiring board substrate 387, an optical source 399, and device circuitry 390. The back-side layers 320 include, but are not limited to, a first cladding layer 330, a core layer 335, a horizontal reflection absorption layer 350, a second cladding layer 360, and a vertical reflection absorption layer 365. The core layer 335 includes, but is not limited to, a vertical-to-horizontal input diffraction grating[[s]] 340, a horizontal-to-horizontal diffraction grating[[s]] 345, and a horizontal-to-vertical output diffraction grating[[s]] (not shown). More particularly, the core structure 325 includes, but is not limited to, the optical source 399, the device circuitry 390, the device substrate 370, and the back-side layers 320. Specifically, the package layer 380, the optical source 399, the device circuitry 390, and the device substrate 370 could be included in an integrated circuit device 315, for example.--